

PATENT COOPERATION TREATY

From the
INTERNATIONAL SEARCHING AUTHORITY

To:

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Box 5581
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PCT

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

(PCT Rule 43bis.1)

Date of mailing (day/month/year) 16 -02- 2005		
Applicant's or agent's file reference 75271	FOR FURTHER ACTION See paragraph 2 below	
International application No. PCT/IB2004/050854	International filing date (day/month/year) 07-06-2004	Priority date (day/month/year) 06-06-2003
International Patent Classification (IPC) or both national classification and IPC F16K 3/02, B81B 3/00		
Applicant Wijngaart, Wouter van der et al		

1. This opinion contains indications relating to the following items:

- ☒ Box No. I Basis of the opinion
- ☐ Box No. II Priority
- ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☒ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☐ Box No. VI Certain documents cited
- ☐ Box No. VII Certain defects in the international application
- ☐ Box No. VIII Certain observations on the international application

2. FURTHER ACTION

If a demand for international preliminary examination is made, this opinion will be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further opinions, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

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International application No.

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Box No. I

Basis of this opinion

1. With regard to the **language**, this opinion has been established on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.
☐ This opinion has been established on the basis of a translation from the original language into the following language, _____, which is the language of a translation furnished for the purposes of international search (under Rules 12.3 and 23.1(b)).
2. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:
 - a. type of material
☐ a sequence listing
☐ table(s) related to the sequence listing
 - b. format of material
☐ in written format
☐ in computer readable form
 - c. time of filing/furnishing
☐ contained in the international application as filed.
☐ filed together with the international application in computer readable form.
☐ furnished subsequently to this Authority for the purposes of search.
3. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
4. Additional comments:

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Box No. IV Lack of unity of invention

1. ☒ In response to the invitation (Form PCT/IPEA/206) to pay additional fees the applicant has:
- ☐ paid additional fees
- ☐ paid additional fees under protest
- ☒ Not paid additional fees
2. ☐ This Authority found that the requirement of unity of invention is not complied with and chose not to invite the applicant to pay additional fees.
3. This Authority considers that the requirement of unity of invention in accordance with Rule 13.1, 13.2 and 13.3 is
- ☐ Complied with
- ☒ Not Complied with for the following reasons:

The following separate inventions were identified:

I: Claims 1-17 and 24-26 directed to a microvalve for flow regulation and a method for its operation.

II: Claims 18-23 directed to a microsystem for electro-pneumatic pressure control.

A partial search has been carried out, which relates to the invention I mentioned above. The applicant is invited to pay an additional fee for invention II as listed above.

The present application has been considered to contain two inventions which are not linked such that they form a single general inventive concept, as required by Rule 13 PCT for the following reasons:

Claim 1 and 24 relate to the problem of flow regulation and a method for the operation of a microvalve. This problem appears to be solved by an obstruction element, operated by an actuator, which is displaceable in a plane substantially perpendicular to the flow.

Claim 18 relates to the problem of controlling a microsystem of valves and ports. This problem is solved by using control signals to open and close the valves in order to control the flow between supply port, the vent port and the work port.

.../...

4. Consequently, this opinion has been established in respect of the following parts of the international application:
- ☐ all parts
- ☒ the parts relating to claims Nos. 1 - 17, 24 - 26

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Supplemental Box

In case the space in any of the preceding boxes is not sufficient.

Continuation of: IV

As both problems and solutions are technically different, no single general concept can be formulated based on the technical features of the inventions. Consequently, the requirements of Rule 13.1 PCT are not met.

It was investigated under Rule 13.2 if any further features, either in the claims or derivable from the description, could be considered as a same or corresponding feature and which could be considered a special technical feature establishing a technical link between the two groups of inventions.

No such features were identified.

Consequently, the two groups of inventions are not so linked as to form a single general inventive concept as required by Rule 13.1 PCT.

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Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Claims	1-17, 24-26	YES
	Claims		NO
Inventive step (IS)	Claims	1-17, 24-26	YES
	Claims		NO
Industrial applicability (IA)	Claims	1-17, 24-26	YES
	Claims		NO

2. Citations and explanations:

Documents cited in the International Search Report:

D1: US6131879

D2: US2003070716

D3: US6523560

D4: DE10027354

The cited documents represent the general state of the art. The invention defined in claims 1-17 and 24-26 is not disclosed by any of these documents.

The cited prior art does not give any indication that would lead a person skilled in the art to the claimed invention of flow regulation and a method for the operation of a microvalve, which is displaceable in a plane substantially perpendicular to the flow. Therefore, the claimed invention is not obvious to a person skilled in the art.

Accordingly, the invention defined in claims 1-17 and 24-26 is novel and is considered to involve an inventive step. The invention is industrially applicable.